



# **Rocky Flats Environmental Technology Site**

## **RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)**

**T452C**

### **GROUP 12 CLOSURE PROJECT**

**REVISION 0**

**April 19, 2002**



**CLASSIFICATION REVIEW NOT REQUIRED PER  
EXEMPTION NUMBER CEX-005-02**

**ADMIN RECORD**

**IA-A-000988**

## RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

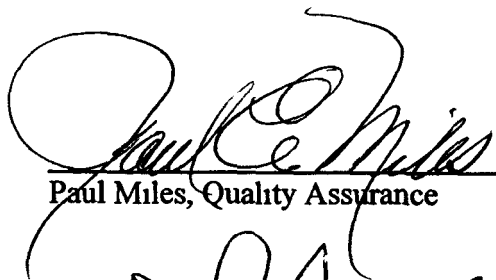
**T452C**

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**REVISION 0**

**April 19, 2002**

**Reviewed by:**



Paul Miles, Quality Assurance

Date: 4/22/02

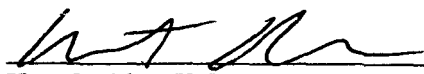
**Reviewed by:**



Duke Snyder, RISS ESH&Q Manager

Date: 4/22/02

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Date: 4/22/02

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- A Facility Location Map
- B Historical Site Assessment Reports
- C Radiological Data Summaries and Survey Maps
- D Chemical Data Summaries and Sample Maps
- E Data Quality Assessment (DQA) Detail

## ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
DCGL <sub>EMC</sub>	Derived Concentration Guideline Level – elevated measurement comparison
DCGL <sub>w</sub>	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U S Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U S Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

## EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the RFETS Decommissioning Program Plan (DPP, K-H, 1999) and compliant disposition and waste management of Trailer 452C. Because this facility was anticipated to be a Type 1 facility, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). All facility surfaces were characterized in this RLC, including the interior and exterior surfaces (i.e., floors, walls, ceilings and roofs). Environmental media beneath and surrounding the facility were not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

Results indicate no radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400.5, and no asbestos containing material. Results also indicate no beryllium contamination. Fluorescent light ballasts may contain PCBs. Any PCB ballasts and hazardous-waste items (e.g., fluorescent light bulbs and any mercury containing items) will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations.

Based upon this RLCR and subject to concurrence by the CDPHE, T452C is considered to be a Type 1 facility. To ensure the facility remains free of contamination and that RLC data remain valid, isolation controls have been established, and the facility has been posted accordingly.

## **1 INTRODUCTION**

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Trailer 452C. Because this facility was anticipated to be a Type 1 facility, a PDS characterization was performed. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facility (i.e., floors, walls, ceilings, and roofs). Environmental media beneath and surrounding the facility were not within the scope of this RLC Report (RLCR) and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed. Among these is T452C. The location of this facility is shown in Attachment A, Facility Location Map. This facility no longer supports the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before the facility can be removed, a Pre-Demolition Survey (PDS) must be conducted, this document presents the PDS results. The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The PDS is built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

### **1.1 Purpose**

The purpose of this report is to communicate and document the results of the RLC effort. PDSs are performed before building demolition to define the final radiological and chemical conditions of a facility. Final conditions are compared with the release limits for radiological and non-radiological contaminants. PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

### **1.2 Scope**

This report presents the final radiological and chemical conditions of T452. Environmental media beneath and surrounding the facility are not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA.

### **1.3 Data Quality Objectives**

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). Refer to section 2.0 of MAN-127-PDSP for these DQOs.

## 2 HISTORICAL SITE ASSESSMENT

A facility-specific Historical Site Assessment (HSA) was conducted to understand the facility history and related hazards. The assessment consisted of a facility walkdown, interviews, and document review, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP). Results were used to identify data gaps and needs, and to develop radiological and chemical characterization packages. Results of the facility-specific HSA were documented in a facility-specific Historical Site Assessment Report (HSAR). Refer to Attachment B, Historical Site Assessment Report, for a copy of the Group 12 HSAR. In summary, the HSAR identified no potential for radiological and chemical hazards, except the potential for asbestos containing materials and PCBs in paint and light ballasts.

## 3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

T452 was characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern. Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describes the minimum survey requirements (refer to the RISS Characterization Project files for the Group 12 Radiological Characterization Plan). One radiological survey unit package was developed for this survey unit (G12-A-005). This survey unit included the interior and exterior surfaces of the facility. The radiological survey unit package is maintained in the RISS Characterization Project files.

The T452C survey unit package was developed in accordance with Radiological Safety Practices (RSP) 16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure*. Total surface activity (TSA), removable surface activity (RSA), and scan measurements were collected in accordance with RSP 16 02 *Radiological Surveys of Surfaces and Structures*. Radiological survey data were verified, validated and evaluated in accordance with RSP 16 04, *Radiological Survey/Sample Data Analysis*. Quality control measures were implemented relative to the survey process in accordance with RSP 16 05, *Radiological Survey/Sample Quality Control*. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps are presented in Attachment C, Radiological Data Summary and Survey Maps.

TSA measurements (15 random, 10 biased and 2 QC) and RSA measurements (15 random and 10 biased) were taken, and a 5% scan survey was performed on the interior and exterior surfaces of T452C. None of the measurements indicated elevated activity above the appropriate DCGL<sub>w</sub> values. Therefore, the PDS confirmed that T452C does not contain radiological contamination above the surface contamination guidelines provided in the RFETS PDSP for D&D Facilities. Isolation control postings are displayed on the facility to ensure no radioactive materials are introduced.

## 4 CHEMICAL CHARACTERIZATION AND HAZARDS

T452C was characterized for chemical hazards per the PDSP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on or in this facility. Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan (refer to RISS Characterization Project files for the Group 12 Chemical Characterization Plan) was developed during the planning phases that describes sampling requirements and the justification for the sample locations and estimated sample numbers. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs. Refer to Attachment D, Chemical Summary Data and Sample Maps, for details on sample results and sample locations. Isolation control postings are displayed on the facility to ensure no hazardous materials are introduced.

### 4.1 Asbestos

A survey of building materials suspected of containing asbestos was conducted in T452C in accordance with the PDSP. A CDPHE-certified asbestos inspector conducted the inspection and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 0*. Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector.

All samples of suspect materials were negative for asbestos. Asbestos sample data and sample location maps are contained in Attachment D, Chemical Data Summaries and Sample Maps.

### 4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, T452C was an anticipated Type 1 facility. There is not, however, adequate historical and process knowledge to conclude that beryllium was not used or stored in this facility. Therefore, biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999*. Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition.

All beryllium sample results were less than  $0.1 \mu\text{g}/100\text{cm}^2$ . Beryllium sample data and sample location maps are contained in Attachment D, Chemical Data Summaries and Sample Maps.

### 4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based on the Group 12 HSAR, interviews and facility walkdowns, there was no record of RCRA/CERCLA constituent operations, storage or spills, and therefore, RCRA/CERCLA constituent sampling was not performed in this facility. The trailer may contain some RCRA regulated items, such as mercury thermostats, fluorescent light bulbs, and lead-acid batteries, and these items will be removed and managed in accordance with the Colorado Hazardous Waste Act.



Sampling for lead in paint in T452C was not performed. Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal.

#### **4.4 Polychlorinated Biphenyls (PCBs)**

Based on the Group 12 HSAR, interviews and facility walkdowns, no PCB-containing equipment were ever present in T452C, and therefore, there is no potential for PCB contamination resulting from spills. Therefore, PCB sampling was not performed in the facility. The facility may contain fluorescent light ballasts that may contain PCBs. Therefore, fluorescent light fixtures will be inspected to identify PCB ballasts during removal operations. PCB ballasts will be identified based on factors such as labeling (e.g., PCB-containing and non-PCB-containing), manufacturer, and date of manufacturing. All ballasts that do not indicate non-PCB-containing are assumed to be PCB-containing. Based on the age of the facility (constructed after 1980), paints used on the facility do not contain PCBs, and painted surfaces can be disposed of as sanitary waste.

### **5 PHYSICAL HAZARDS**

Physical hazards associated with T452C consist of those common to standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. There are no unique hazards associated with the facility. The facility has been relatively well maintained and is in good physical condition, and therefore, does not present hazards associated with building deterioration. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

### **6 DATA QUALITY ASSESSMENT**

Data used in making management decisions for decommissioning of T452C, and consequent waste management, are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- ◆ the *number* of samples and surveys,
- ◆ the *types* of samples and surveys,
- ◆ the sampling/survey process as implemented "in the field", and,
- ◆ the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are provided in Attachment E.

## 7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of T452C will generate a variety of wastes. Estimated waste types and waste volumes are presented below. All wastes can be disposed of as sanitary waste, except PCB Bulk Product Waste. There is no radioactive or hazardous waste. PCB ballasts will be managed pursuant to Site waste management procedures.

Waste Volume Estimates and Material Types, T452C							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
T452C	390	460	722	2,100	600	None	Glass - 30 Carpet - 120

## 8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, T452C is classified as a RFCA Type 1 facility pursuant to the RFETS Decommissioning Program Plan (DPP, K-H, 1999). The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC data, and will be subject to concurrence by the Colorado Department of Public Health and the Environment (CDPHE).

The RLC of T452C was performed in accordance with the DDCP and PDSP. All PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. The facility does not contain radiological materials in excess of PDSP prescribed limits. PCB ballasts and any hazardous-waste items (e.g., fluorescent light bulbs and any mercury containing items) will be removed and disposed of in compliance with EPA and CDPHE regulations. Environmental media beneath and surrounding the facilities will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

To ensure that the Type 1 facility remains free of contamination and that RLC data remain valid, isolation controls have been established, and the facility is posted accordingly.

## 9 REFERENCES

- DOE/RFFO, CDPHE, EPA, 1996 Rocky Flats Cleanup Agreement (RFCA), July 19, 1996
- DOE Order 5400 5, "Radiation Protection of the Public and the Environment "
- DOE Order 414 1A, "Quality Assurance "
- EPA, 1994 "The Data Quality Objective Process," EPA QA/G-4
- K-H, 1999 Decommissioning Program Plan, June 21, 1999
- MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev 1, November 1, 2001
- MAN-076-FDPM, *Facility Disposition Program Manual*, Rev 3, January 1, 2002
- MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol*, Rev 3, April 23, 2001
- MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev 0, April 23, 2001
- MARSSIM - Multi-Agency Radiation Survey and Site Investigation Manual (NUREG-1575, EPA 402-R-97-016)
- PRO-475-RSP-16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure*, Rev 1, May 22, 2001
- PRO-476-RSP-16 02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev 1, May 22, 2001
- PRO-477-RSP-16 03, *Radiological Samples of Building Media*, Rev 1, May 22, 2001
- PRO-478-RSP-16 04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev 1, May 22, 2001
- PRO-479-RSP-16 05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev 1, May 22, 2001
- PRO-563-ACPR, Asbestos Characterization Procedure, Revision 0, August 24, 1999
- PRO-536-BCPR, Beryllium Characterization Procedure, Revision 0, August 24, 1999
- RFETS, Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition
- RFETS, Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal
- RFCA Standard Operation Protocol for Recycling Concrete, September 28, 1999
- RFETS, Historical Site Assessment for Group 12, November 2001








# ATTACHMENT A

## Facility Location Map

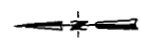
**Best Available Copy**

# Building T452C

## Standard Map Features

-  Buildings and other structures
-  Solar Evaporation Ponds (SEPs)
-  Lakes and ponds
-  Streams, ditches, or other drainage features
-  Fences and other barriers
-  Paved roads
-  Dirt roads

**DATA SOURCE BASE FEATURES**  
 Buildings, fences, hydrography roads and other structures from 1994 aerial fly-over data captured by Es&G ISI, Las Vegas. Digitized from the orthophotographs, 1995

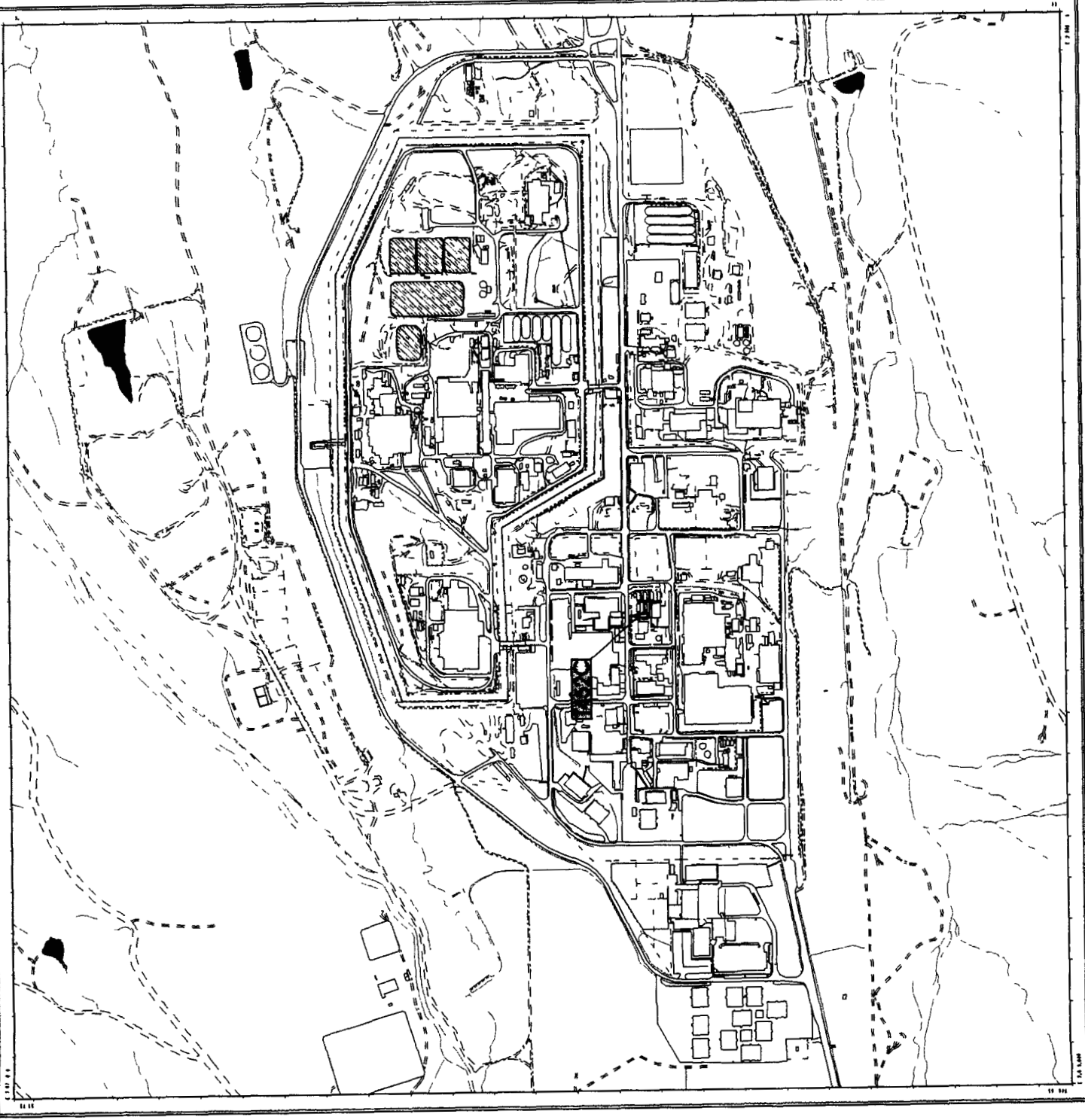


Scale - 1:12450  
 1 inch represents approximately 1038 feet  
 210' 0' 30' 60' 90' 120' 150' 180' 210' 240' 270' 300' 330' 360'  
 State Plane Coordinates Projection  
 Contour Interval 10 Feet  
 Datum: NAD83

U.S. Department of Energy  
 Rocky Flats Environmental Technology Site

Prepared by  
**DynCorp**  
 THE ART OF TECHNOLOGY  
 MAP ID: FY 2002

Prepared for  
**Kaiser Hill**  
 April 16, 2002



## ATTACHMENT B

# Historical Site Assessment Report

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
November 1, 2001, Rev. 0**

**Facility ID:** Area 1 – Group 12, aka Building 452 Cluster Facilities, Includes Building 452, S-452 Janitor's Storage, T-428B Storage, T-452A Office Trailer, T-452B Office Trailer, T-452C Office Trailer, T-452D Office Trailer, T-452E Portable Rest Rooms Trailer, T-452F Office Trailer, T-452G Office Trailer

**Anticipated Facility Type (1, 2, or 3):** Building 452 = Type 1, S-452 = Type 1, T-428B = Type 1, T-452A = Type 1, T-452B = Type 1, T-452C = Type 1, T-452D = Type 1, T-452E = Type 1, T-452F = Type 1, T-452G = Type 1

Refer to attached site drawing for facility location

This facility – specific Historical Site Assessment (HSA) has been performed in accordance with  
*D&D Characterization Protocol*, RFETS MAN-077-DDCP, latest version, and  
*Facility Disposition Program Manual*, RFETS MAN-076-FDPM, latest version

**Physical Description**

Building 452 is an office facility and it is a single-story, pre-engineered, metal-frame building on a concrete foundation and floor. Building 452 is located immediately north of Cottonwood Avenue at approximately Sixth Street. Building 452 was constructed and put into service in 1983. The exterior walls are drab-olive color enamel corrugated steel panels sandwiched over 3" of fiberglass insulation. Building 452 is a rectangular-shaped facility with dimensions of approximately 60' wide X 100' long X 12' high at the roof eave, 16' high at the roof peak. The roof is corrugated steel panels over 3" batting insulation. The size of Building 452 is approximately 6,000 square feet. Building 452 has no floor drains. Building 452 has a Men's and Women's Restrooms, which are connected to the Plant sewer system. The restrooms, which are located in the southwest corner of Building 452 and have drywall ceilings and walls. Both restrooms have 12" X 12" vinyl-type tiled floors. Building 452 has no visible roof drain downspouts, but they must be located under the exterior metal skin and probably drain into an underground storm-sewer and drainage system. The offices and hallways of Building 452 are partitioned with drywall and paneling with steel-stud construction. The hallways, offices, and rooms, and labs have the drop-ceilings with acoustical ceiling tiles. Building 452 has 2 entry doors and both are covered for weather protection. Door 1 is a personnel entry door on the west side. Door 2 is an exit door on the east side of the building.

Building 452 is heated by natural gas and the HVAC system is located outside on the west wall directly north of the west entrance to the office facility. The HVAC is ducted to all offices and rooms above the ceiling. Building 452 electrical power is provided by a large 480-V transformer located north of the building near Central Avenue and it supplies power to all of the office trailers in Area 1 - Group 12. This power transformer area has power disconnects for Building 452 and each individual office trailer. Building 452 has another dedicated 480-V transformer located on a concrete pad near the northwest corner of the building.

Building 452 domestic cold water is connected to the two restrooms in the building. The Women's Restroom has an electric hot water heater, which provides hot water for both restrooms. Building 452 has a LSDW System with speakers in all areas of the facility. Building 452 is connected to the Plant sanitary sewer system. There are no process sinks or process drains in Building 452. Building 452 is connected to the Plant Fire Detection and Alarm System. Building 452 has two exterior mercury vapor lights, one near the west entrance and one near the east entrance.

S-452 Janitor's Storage is an all-wood storage shed on a concrete slab, it is located directly west of the west entrance to Building 452. S-452 is approximately 4' – 6" wide X 6' long X 8' high on the east and 7' – 6" on the west. The roof of S-452 is flat and slopes to the west for water drainage and the roof is covered with roll roofing material, which might contain asbestos.

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
November 1, 2001, Rev. 0**

**Physical Description (Con't)**

T-428B Storage is a skid mounted wooden storage shed (listed as a trailer on the Projects Facility List) and is located directly west of the northwest corner of Building 452. T-428B is approximately 10' wide X 12' long X 8' high. The roof of T-428B and the exterior walls are covered with corrugated metal. The interior walls are insulated and covered with wood paneling. The drop-ceiling contains acoustical tile, roof/ceiling insulation, and one 2' X 4' recessed lighting panel. T-428B was acquired (or constructed) in 1980 and has always been used as a storage facility for "cold" equipment items as per the interviewees for this facility. T-428B has a wood entry ramp that is 3' wide X 5' long X 0" high to 18" high and the ramp is not attached to the storage shed.

T-452A Office Facility is a modular construction type and was constructed in the summer of 1983. T-452A is 60'3" long X 24'3" wide X 13'4" high including the 40" metal skirt around the foundation. Covered entry doors are located on the east and west ends of the facility. There are 5' by 8' covered wooden decks and steps leading to the doors. The covering for entryway and the sides of the building is galvanized corrugated sheet metal. The skirting around T-452A is enamel baked on corrugated aluminum. The building is located at the corner of Cottonwood Avenue and Sixth Street. Structurally the building is sound, there are no leaks in the ceiling and the outside has no damage. The interior perimeter is dry wall over insulation, the ceiling is a drop ceiling with 2' by 4' acoustical tile and the floor is carpet covering wood flooring. The foundation could not be observed as the skirting covered it. Both entry doors have cipher locks on them. It has been an office building through out its use.

The utilities for this building are an electric heat pump for heating and cooling, and it is connected to the Plant Fire Alarm and LSDW Systems. The drawings for this unit consist only of a Facility Planning layout sketch of the cubicles. Radiological surveys may have been done, but the old data is not available. This unit will have to be resurveyed to meet present standards for unrestricted release.

T-452B Office Facility is of the modular construction type and was constructed in 1983, 84 time frame. T-452B is 60'3" long X 24'3" wide X 13'4" high including the 40" metal skirt around the foundation. Covered entry doors are located on the east and west ends of the facility. There are 5' by 8' covered wooden decks and steps leading to the doors. The covering for the entryway and the sides of the building is galvanized sheet metal. The skirting around T-452B is enamel baked on corrugated aluminum. The building is located at the corner of Cottonwood Avenue and Sixth Street. Structurally the building is sound, there are no leaks in the ceiling and the outside has no damage. The interior perimeter is dry wall over insulation, the ceiling is a drop ceiling with 2' by 4' acoustical tile and the floor is carpet covering wood flooring. The foundation could not be observed as the skirting covered. Both entry doors have cipher locks on them.

It has been an office building through out its use. Presently T-452B Office Trailer is not occupied, but there is some miscellaneous chairs, desks, and furniture left over from the previous occupants.

The utilities for this building are an electric heat pump for heating and cooling and it is connected to the Plant Fire Alarm and LSDW Systems. The drawings for this unit consist only of a Facility Planning lay out sketch of the cubicles. Radiological surveys may have been done, but the old data is not available. This unit will have to be resurveyed to meet present standards for unrestricted release.



**D&D RISS Facility Characterization  
Historical Site Assessment Report  
November 1, 2001, Rev. 0**

**Physical Description (Con't)**

T-452C Office Facility is a modular construction type of building constructed in 1984, 85-time frame T-452C is 60'3" long X 24'3" wide X 13'4" high including the 40" metal skirt around the foundation Covered entry doors are located on the east and west ends of the facility There are 5' by 8' covered wooden decks and steps leading to the doors. The covering for the entryway and the sides of the building is galvanized sheet metal Skirting around the building is enamel baked on corrugated Aluminum The building is located at the corner of Central Avenue and Sixth Street. Structurally the building is sound, there are no leaks in the ceiling and the outside has no damage The interior perimeter is dry wall over insulation, the ceiling is a drop ceiling with 2' by 4' acoustical tile panels and the floor is carpet over wood flooring The foundation could not be observed because of the skirting around the building Both entry doors have cipher locks on them

It has been an office building through out its use There are 12 cubicles, two hard walled offices and a hard walled Lektreiver® area One cubicle is a printer/copier area and one is used for storage The offices are equipped with a desk, chair, computer, over desk book shelf, book shelves, filing cabinets of various sizes and in some offices a table and extra chairs

The utilities for this building are an electric heat pump for heating and cooling and it is connected to the Plant Fire Alarm and LSDW Systems The drawings for this unit consist only of a Facility Planning lay out sketch of the cubicles Radiological surveys may have been done, but the old data is not available This unit will have to be resurveyed to meet present standards for unrestricted release

T-452D Office Facility is a modular construction type of building which was put into service in 1983 at the Plant's T-452 Site, which is south of Central Avenue and west of the Railroad Tracks at approximately Sixth Street of the RFETS T-452D is 60'3" long X 24'3" wide X 13'4" high including the 40" metal skirt around the foundation Covered entry doors are located on the east and west ends of the facility There are 5' by 8' covered wooden decks and steps leading to the doors. The T-452D Unit has an exterior covering of galvanized corrugated metal with enameled metal skirt approximately 40" high around the base of the building The footing/foundation could not be observed because of the skirting around the building Both of the T-452D door entryways are constructed from wood with a painted surface and they are covered with a galvanized corrugated metal skin T-452D has approximately 1440 square feet of floor space The interior of T-452D is dry wall over insulation, the ceiling is a drop type with acoustical tile panels, and floor is carpeting over wood flooring Both entry doors have cipher locks on them

The T-452D Unit has an electric heat pump, which provides both heat and air conditioning Each office has a computer, desk, chair, bookcase, and one or more file cabinets There are 6 computers, a fax machine, and a copier in use in this office facility One office cubicle has approximately 10 large filing cabinets The T-452D Unit does not have an as built drawing, but a building layout drawing is available

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
November 1, 2001, Rev. 0**

**Physical Description (Con't)**

T-452E is a Portable Restroom Facility. The T-452E Unit appears to be in good condition. The T-452E location is Central Avenue and Sixth Street, southwest corner, west of the railroad tracks. The T-452E Unit was put into service in 1984 at the Plant's T452 Site. The physical size of the modular building is approximately 8' X 10' for approximately 80 square feet of floor space. The building has been a Men and Women restroom facility since the 1984 installation date. The modular building sets on a concrete foundation/footers. The modular building has 2 entry doors with steps and deck entry, which is approximately 5' X 9' including the two steps, is constructed from wood with a painted surface. The foundation/footers have a wooden skirt approximately 18' high all around, at the base of the building, for this reason the footing/foundation and tie-down method could not be observed. The materials of construction for the small modular building are concrete foundation/footers, wooden steps and entry way, wooden building frame with Masonite® wall material on the interior walls, and the exterior walls and roof are covered with a corrugated metal skin. Both doors on this facility have privacy locks, sliding bolt locks, on the inside of the doors.

The T-452E Unit has electric baseboard type heat. According to Nick Demos, HRR Contact on X4605 T452E has no CERCLA concerns. The building system consists of a water closet, water, a sink in both the men's and the women's restroom. The T-452E Unit has electric baseboard type heat. The building has heat tracing of the water pipes to keep from freezing. The T-452E Unit has two exhaust fans installed, one on the north wall and one on the south wall. The T-452E Unit is hooked up to the Plant Sewer System and there are 3 sewer vents extending up through the roof. T-452E does not have an as-built drawing or a building layout drawing.

T-452F Office Trailer was put in place in the 1985, 86 time frame and is a doublewide type of construction. The location for this trailer is at the corner of Central Avenue and Sixth Street. T-452F is approximately 60' 3" long X 26' 3" wide X 13' high with two covered side entries on the south side. Wooden steps and deck covered by plywood sides and roof reach the entry. The trailer is enamel baked on corrugated Aluminum and the skirting is enamel baked on corrugated sheet metal. The foundation could not be observed as the skirting covered it. Structurally the building is sound, there are no leaks in the ceiling and the outside has no damage. The interior perimeter is wood paneling over insulation. Some of the interior walls are wood paneling and two are drywall. The ceiling is a drop ceiling with 2' by 4' acoustical tile and the floor is carpet over wood flooring. Both entry doors have cipher locks on them.

The original use was an office in the East End and a health effects lab in the West End. Only the East End is occupied at the present time. There are two labs in the West End and in the East End there are two hard walled offices and a work center. The offices have a desk, chair, computer, over desk bookcase, printer, and file cabinets. The work center has a fax machine, computer, printer, worktables and chairs.

The utilities for this trailer are an electric heat pump for heating and cooling and it is connected to the plant fire alarm and PA systems. The drawings for this unit consist only of a Facility Planning lay out sketch. The trailer has been surveyed for Be as the lab did analysis on Be smears and other Be analysis. The Be smears were taken on all the working surfaces but none were taken in the hood or the exhaust duct. No detectable Be was found on the working surfaces. It is unknown at the present time if there were any chemical spills in the lab. Radiological surveys may have been done, but the old data is not available. This unit will have to be resurveyed to meet present standards for unrestricted release. A WSRIC has been written for this trailer.

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
November 1, 2001, Rev. 0**

**Physical Description (Con't)**

T-452G Office Trailer is doublewide trailer, that was put into service at the Plant's T-452 Site late 1986 or early 1987. The T-452G Unit is located south of Central Avenue and west of the Railroad Tracks at approximately Sixth Street of the RFETS. The T-452G Unit has an exterior covering of enameled corrugated aluminum with an enameled aluminum skirt approximately 28" high around the footing/foundation. The footing/foundation could not be observed because of the skirting around the building. The T-452-G Unit has 2 entry doors on the south side of the unit with steps and deck entryway, which is approximately 4' X 9' including the 5 steps on the west entry. The entry is, constructed from wood and the roof is covered with wood and asphalt. The trailer's east door entry is approximately 9' X 5' with 5 steps, constructed from wood, is an L-shaped entry, covered door/dock with asphalt type roofing material. The physical size of the modular building is approximately 26'3" X 60' 3" for approximately 1582 square feet of floor space. In addition, this trailer has a 12' X 12' X 8' section, for an additional 144 square feet, that has been added on to the NE corner of the trailer. This added-on section has a corrugated sloped metal roof. The added-on section has equipment to support the unused respirator fit chambers. The interior of T-452G is wood paneling over insulation, the ceiling is a drop type with acoustical tile panels, and the floor is carpeting over wood flooring. Both entry doors have cipher locks on them.

T-452G has 2 office cubicles, 2 lab rooms, 2 storage rooms, 2 unused respirator fit test chamber rooms, and the T-452G Trailer is occupied by two employees full time, Industrial Hygiene personnel. The T-452G Trailer serves as a Thermoluminescent Dosimeter (TLD) Badge Exchange location for the T-452A-G Building 452 Trailer Complex. Other historical information was obtained from Kris Keith, X8253, Building 122 Room 171. Mr. Keith operated the Respirator Fit Chambers when they were operating in T-452G and he was the longest known resident of the trailer. The equipment being used in T-452G include, 4 computers, electronic typewriter, 2 small refrigerators for food, 1 microwave unit for cooking, Industrial Hygiene test/calibration instrumentation, and three auxiliary window type air conditioning units.

The utilities for the T-452G Unit are an electric heat pump type which provides both heat and air conditioning, and the unit is connected to the Plant Fire Alarm, the unit has a Fire Sprinkler System, and LSDW Systems.

**Historical Operations**

Building 452 originally was a building to provide space for Building 444 Production Offices. Later, Building 452 became Product Engineering Offices. In 1992 Building 452 became a Human Resource Office Facility. In 1992 Building 452 was modified by, adding many additional hard-walled offices, office cubicles, and four records Lektrevs® were also added.

S-452 Janitor's Storage has always been a storage facility.

T-428B Storage has always been a storage facility.

T-452A Office Trailer, T-452B Office Trailer, T-452C Office Trailer, T-452D Office Trailer, have always been an office facilities.

T-452E Portable Restroom Trailer has always been a Men's and Women's Restroom Facility.

T-452F Office Trailer has always been an office facility and calibration and Be anti-body lab.

T-452G Office Trailer has been a respirator fit/test facility and an office facility.

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
November 1, 2001, Rev. 0**

**Current Operational Status**

Building 452 is currently used as a Human Resource office facility for RFETS Building 452 provides offices for approximately 20 Human Resources employees including Employment and other Human Resources related job functions

S-452 Janitor's Storage is currently used as a janitorial storage facility

T-428B Storage is currently used as a storage facility for Building 374 Waste Operations Items being stored in T-428B include excess office equipment, office chairs, and several storage cabinets along with miscellaneous tools

T-452A Office Trailer is currently used as an office facility for the Site Custodial Services Group Four Custodial Managers/Foremen have offices in T-452A and daily meetings are held with Site employees

T-452B Office Trailer is currently not in use, but some excess office chairs and equipment are stored in the facility

T-452C Office Trailer is currently used as a Radiological Operations Office and a Smear Counting Lab for radiological smear sample Nine Radiological Foremen and Radiological Control Technicians are assigned to work in and out of the facility

T-452D Office Trailer is currently used as an office facility for nine RFCSS and other miscellaneous engineers

T-452E Portable Restroom Trailer is currently used as a Men's and Women's Restroom Facility for the 452 Office Trailer Site

T-452F Office Trailer is currently used as an office facility for two RFCSS Managers

T-452G Office Trailer is currently used as an office facility for two RFCSS employees

**Contaminants of Concern**

**Asbestos**

*Describe any potential, likely, or known sources of asbestos*

None of entry doors into the Area 1- Group 12 Office Facilities are posted with the standard ACM warning signs

Asbestos sample data exists for Area 1- Group 12 Office Facilities T-452A, T-452B, T-452C, T-452D, T-452F, and T-452G Asbestos data exists in the Plant Industrial Hygiene Asbestos Library, T-130B east of Cubicle No asbestos sample data exists for Area 1- Group 12 Office Facilities Building 452, S-452, T-428B, or T-452E

**Beryllium (Be)**

*Describe any potential, likely, or known Be production or storage locations*

There were no known, likely, or potential beryllium production or storage areas in Building 452 The Building 452 is not on the Listing of Beryllium Areas, Historical and Present

*Summarize any recent Be sampling results*

None

None of the people interviewed knew of any Be sampling that was ever conducted in Building 452 or the other facilities in Area 1- Group 12, except T-452F, which at one time contained a small beryllium antibody research laboratory Be sampling in T-452F would not have been recent

**D&D RISS Facility Characterization  
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**Lead**

*Describe any potential, likely, or known sources of Lead (e g , paint, shielding, etc )*

Building 452 does not have any lead shielding During an October 2001 walkdown tour, no lead of any kind was found in any of the Area 1 – Group 12 Facilities Building 452 was constructed in 1983 and the many painted areas both inside and outside probably were not painted with lead-based paints All of the rest of the facilities in Area 1 – Group 12 date back to 1979 for construction dates and may have been painted with lead-based paints These lead-based paints may have also contained PCBs Lead solder may have been used in electrical connections in Building 452 and all the rest of the Area 1 – Group 12 Facilities The Plant stopped the use of lead base paint for office buildings in 1989 If any of the Area 1 – Group 12 Facilities were, painted before this date, may have been painted with lead based paints

**RCRA/CERCLA Constituents**

*Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e g , chemical storage, waste storage, processes)*

Building 452 contained no visible sources of RCRA/CERCLA constituents The only known chemical storage in Building 452 was chemicals for janitorial cleaning and toner supplies for copiers and printers The interviewees had no knowledge of sources of RCRA/CERCLA constituents The Building 452 exterior east and west walls each contain one lighting fixture that appear to be mercury vapor lights None of the facilities in Area 1 – Group 12 have any tanks or areas that are listed on the Master Listing of RCRA Units Building 452 does not have any equipment that is listed in the Appendix 1 – Idle Equipment With Hazardous Materials Inventory Building 452 does not any have any equipment that is listed in the Appendix 1A – Idle Equipment With Non-Hazardous Materials Inventory Office Trailer T-452G is the facility in Area 1 – Group 12 Facilities that as WSRIC written for it Several years ago Office Facility T-452F also had a WSRIC, but currently it does not.

*Describe any potential, likely, or known spill locations (and sources, if any)*

None

There are no potential, likely, or known spills of RCRA/CERCLA constituents in any of the Area 1 – Group 12 Facilities

*Describe methods in which spills were mitigated, if any*

None

N/A for the Area 1 – Group 12 Facilities

**PCBs**

*Describe any potential, likely, or known sources of PCBs (e g , light Ballasts, paints, equipment, etc )*

Power transformers, light ballasts, and paints used in the Building 452 could contain PCBs, but the facility was constructed in the 1982-1983 time frame All the rest of the facilities, modular facilities and trailers (T-452A-G and T-428B), are much older, therefore the power transformers, light ballasts, and paints used in these facilities could contain PCBs S-452 is very small janitorial storage facility, which is fairly new, and is not likely to contain PCBs in the paint and there are no other potential sources of PCBs

*Describe any potential, likely, or known spill locations (and sources, if any)*

Interviewees had no knowledge of PCBs and/or spills of PCBs

*Describe methods in which spills were mitigated, if any*

Interviewees had no knowledge of PCBs and/or spills of PCBs, therefore mitigation would not have been required

**D&D RISS Facility Characterization  
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**Radiological Contaminants**

*Describe any potential, likely, or known radiological production or storage locations*

None

Interviewees had no knowledge of any radiological production areas Building 452 depleted uranium and contaminated pieces of equipment found during strip-out of the Building 452 labs, as of August 22, 2001, as per Richard A Link.

*Describe any potential, likely, or known spill locations (e g , known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc )*

None

*Describe methods in which spills were mitigated, if any*

None

*Describe any potential, likely, or known isotopes of concern (e g , weapons grade plutonium, uranium isotopes, pure Beta emitters, mixed fission products, etc )*

None

*Describe any potential, likely, or known external facility contamination (e g , stack release points, unfiltered ventilation, facility's physical location to known site releases, etc )*

None

**Radiological Contaminants (Cont't)**

*Describe any process waste lines associated with the facility, if any (Are any abandoned? Capped?)*

None

**Environmental Restoration Concerns**

*Describe any ER concerns that could affect facility characterization (e g , IHSSs, PACs, UBCs)*

Building 452 and all the other facilities in the Area 1 – Group 12 Facilities have no IHSSs, PACs, or UBC in the facilities themselves, but the land/soils beneath and around where these facilities are constructed have several IHSS/PACs According to Nick Demos, HRR Contact on X4605, Area 1 – Group 12 Facilities have no has no CERCLA concerns, but the land/soils where the facilities are constructed does have CERCLA concerns The land/soils IHSS/PACs include IHSS 400-157 2, PAC 400-803, 400-804, and PAC 400-187 The Rock Pit located adjacent to the south side of Building 452 contains potentially contaminated soil generated under near Emergency I&E Security Projects as per Mr Demos

**Additional Information**

*Describe any additional information that may be useful during facility characterization (e g , contaminant migration routes, waste-handling operations, physical hazards, Historical Release Reports, WSRIC data, etc )*

Interviewees had no knowledge of any additional information that may be useful during facility characterization There is very little HRR information concerning Building 452 Extensive WSRIC books exist for Building 452, but the labs for which they were written no longer exist

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
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**References**

Provide all sources of information utilized to gather data for facility history (e g , documents, files, interviews) Attach all applicable supporting documentation

**References used were:** HRR, Site SAR, IHSS/PAC/UBC Site Maps, Listing of Beryllium Areas, Historical and Present, the T-130B Industrial Hygiene Asbestos Inventory Library, Building 452 Engineering Drawings, Appendix 1 of Idle Equipment With Hazardous Materials Inventory, Master Listing of RCRA Units, and Appendix 1A of Idle Equipment With Non-Hazardous Materials Inventory, the T- 452G WSRIC Books, and Historic American Engineering Record for the RFETS

**Waste Volume Estimates and Material Types, Area 1 – Group 12**

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM	Other Waste (cu ft)
B452	5,100	1,050	2,374	3,694	3,800	(ACM TBB) Floor tile 10 cu ft Insul 5, 500 cu ft Accoust Ceil Tile 500 cu ft	Glass 90 cu ft Carpet 500 cu ft Merc Lights 2 cu ft
S-452	15	72	6	None	None	Roofing 4 cu ft (ACM TBD)	Glass 1 cu ft
T428B	None	184	4	114	30	82 cu ft (ACM TBD)	None
T452A	390	460	722	2,100	300	Insul 1,852 cu ft (ACM TBD)	Glass 30 cu ft Carpet 120 cu ft
T452B	390	460	722	2,100	600	Insul 1,852 cu ft (ACM TBD)	Glass 30 cu ft Carpet 120 cu ft
T452C	390	460	722	2,100	600	Insul 1,852 cu ft (ACM TBD)	Glass 30 cu ft Carpet 120 cu ft
T452D	390	460	722	2,100	600	Insul 1,852 cu ft (ACM TBD)	Glass 30 cu ft Carpet 120 cu ft
T452E	60	180	6	16	26	Insul 480 cu ft (ACM TBD)	Glass 30 cu ft
T452F	480	460	722	2,100	300	Insul 1,852 cu ft (ACM TBD)	Glass 30 cu ft Carpet 120 cu ft
T452G	1,160	460	722	2,100	300	Insul 1,852 cu ft (ACM TBD)	Glass 30 cu ft Carpet 120 cu ft

**D&D RISS Facility Characterization  
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**Further Actions**

*Recommend any further actions, if any (e g , characterization, decontamination, special handling, etc )*

Begin the RLC/PDS process

**Note:**

This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations. SMEs should evaluate and/or verify all information during the RLC/PDS process. SMEs may need to review additional documentation and perform additional interviews. Information contained in this HSA only represents a "snapshot" in time. Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report. However, this report will not be amended, and the newer data will take precedence over the data in the report. Newer Data will appear in the RLCR/PDSR.

Prepared By.

Bob Sheets

Print Name



Signature

November 1, 2001

Date



# ATTACHMENT C

## Radiological Data Summaries and Survey Maps

**SURVEY UNIT G12-A-005**  
**RADIOLOGICAL DATA SUMMARY**

**Survey Unit Description: Interior & Exterior of T452C**

**G12-A-005  
Radiological  
Data Summary**

<u>Total Surface Activity Measurements</u>			<u>Removable Activity Measurements</u>		
	25	25		25	
	Number Required	Number Obtained		Number Required	Number Obtained
MIN	-4.7	dpm/100 cm <sup>2</sup>	MIN	-0.6	dpm/100 cm <sup>2</sup>
MAX	60.2	dpm/100 cm <sup>2</sup>	MAX	9.1	dpm/100 cm <sup>2</sup>
MEAN	15.4	dpm/100 cm <sup>2</sup>	MEAN	1.0	dpm/100 cm <sup>2</sup>
STD DEV	18.7	dpm/100 cm <sup>2</sup>	STD DEV	2.4	dpm/100 cm <sup>2</sup>
TRANSURANIC DCGL <sub>w</sub>	100	dpm/100 cm <sup>2</sup>	TRANSURANIC DCGL <sub>w</sub>	20	dpm/100 cm <sup>2</sup>

**SURVEY UNIT G12-A-005  
TSA DATA SUMMARY**

Manufacturer*	NE Electra	NE Electra
Model	DP-6	DP-6
Instrument ID#	7	8
Serial #	1379	3114
Cal Due Date	5/6/02	8/13/02
Analysis Date	4/18/02	4/18/02
Alpha Eff (c/d)	0.198	0.218
Alpha Bkgd (cpm)	2.7	2.7
Sample Time (min)	1.5	1.5
LAB Time (min)	1.5	1.5
MDC (dpm/100cm <sup>2</sup> )	48.0	48.0

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm <sup>2</sup> )	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm <sup>2</sup> )	Sample Net Activity (dpm/100cm <sup>2</sup> ) <sup>1</sup>
1	7	6.7	33.8	9.3	47.0	16.8
2	8	3.3	15.1	3.3	15.1	1.9
3	8	6.7	30.7	4.0	18.3	13.7
4	8	3.3	15.1	1.3	6.0	1.9
5	7	10.7	54.0	9.3	47.0	37.0
6	7	15.3	77.3	2.7	13.6	60.2
7	8	2.7	12.4	0.0	0.0	-4.7
8	8	12.7	58.3	1.3	6.0	41.2
9	8	14.0	64.2	2.0	9.2	47.2
10	8	5.3	24.3	2.7	12.4	7.2
11	7	6.0	30.3	5.3	26.8	13.2
12	8	8.7	39.9	2.0	9.2	22.8
13	8	8.7	39.9	4.0	18.3	22.8
14	8	2.7	12.4	1.3	6.0	-4.7
15	8	3.3	15.1	2.7	12.4	1.9
16	8	4.7	21.6	4.7	21.6	4.5
17	8	8.7	39.9	1.3	6.0	22.8
18	8	5.3	24.3	4.7	21.6	7.2
19	8	12.3	56.4	7.3	33.5	39.4
20	7	10.0	50.5	4.0	20.2	33.4
21	8	7.3	33.5	5.3	24.3	16.4
22	8	4.7	21.6	4.7	21.6	4.5
23	8	3.3	15.1	2.0	9.2	1.9
24	8	2.7	12.4	2.0	9.2	-4.7
25	8	2.7	12.4	2.7	12.4	-4.7

<sup>1</sup> Average LAB used to subtract from Gross Sample Activity

17.1	Sample LAB Average
MIN	-4.7
MAX	60.2
MEAN	15.4
SD	18.7
Transuranic DCGL <sub>w</sub>	100

**QC Measurements**

1QC	7	10.7	54.0	4.7	23.7	27.0
12QC	7	6.0	30.3	6.0	30.3	3.3

<sup>1</sup> Average QC LAB used to subtract from Gross Sample Activity

27.0	QC LAB Average
Transuranic DCGL <sub>w</sub>	100

**SURVEY UNIT G12-A-005  
SMEAR DATA SUMMARY**

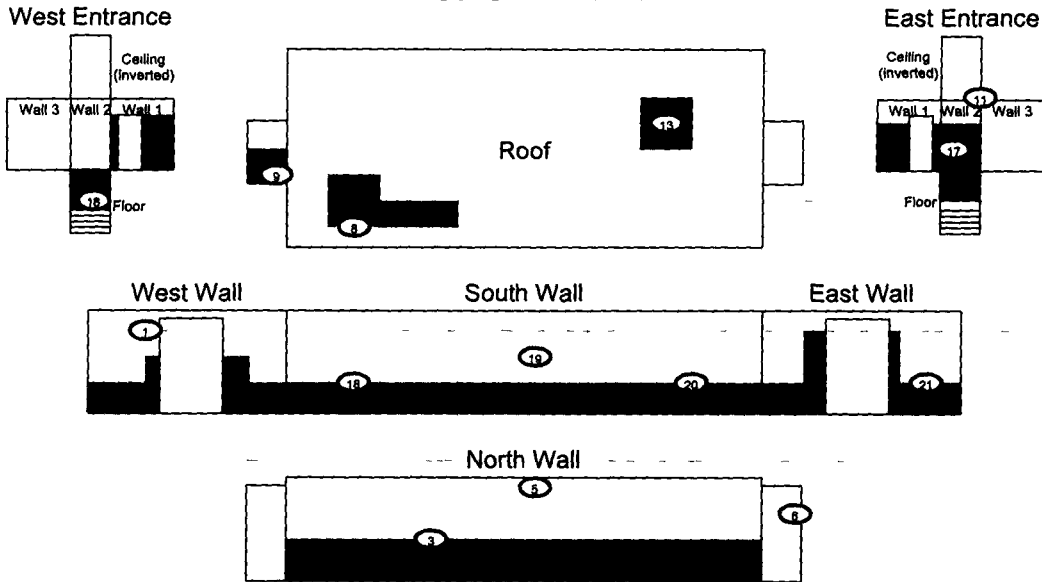
<b>Manufacturer</b>	Eberline	Eberline	Eberline	Eberline
<b>Model</b>	SAC-4	SAC-4	SAC-4	SAC-4
<b>Instrument ID#</b>	1	2	3	4
<b>Serial #</b>	770	767	959	1164
<b>Cal Due Date</b>	7/25/02	4/30/02	7/14/02	5/13/02
<b>Analysis Date</b>	4/18/02	4/18/02	4/18/02	4/18/02
<b>Alpha Eff (c/d)</b>	0 33	0 33	0 33	0 33
<b>Alpha Bkgd (cpm)</b>	0 1	0 0	0 1	0 2
<b>Sample Time (min)</b>	2	2	2	2
<b>Bkgd Time (min)</b>	10	10	10	10
<b>MDC (dpm/100cm<sup>2</sup>)</b>	7 0	4 5	7 0	8 0

<b>Sample Location Number</b>	<b>Instrument ID#</b>	<b>Gross Counts (cpm)</b>	<b>Net Activity (dpm/100 cm<sup>2</sup>)</b>
1	4	1 0	2 4
2	4	0 0	-0 6
3	1	1 0	2 7
4	1	0 0	-0 3
5	2	0 0	0 0
6	2	2 0	6 1
7	4	0 0	-0 6
8	3	1 0	2 7
9	1	0 0	-0 3
10	3	0 0	-0 3
11	2	0 0	0 0
12	1	1 0	2 7
13	2	3 0	9 1
14	1	0 0	-0 3
15	3	0 0	-0 3
16	4	0 0	-0 6
17	1	0 0	-0 3
18	4	0 0	-0 6
19	4	0 0	-0 6
20	3	0 0	-0 3
21	3	0 0	-0 3
22	3	0 0	-0 3
23	4	1 0	2 4
24	2	0 0	0 0
25	2	1 0	3 0
		MIN	-0 6
		MAX	9 1
		MEAN	1 0
		SD	2 4
		Transuranic DCGL <sub>w</sub>	20

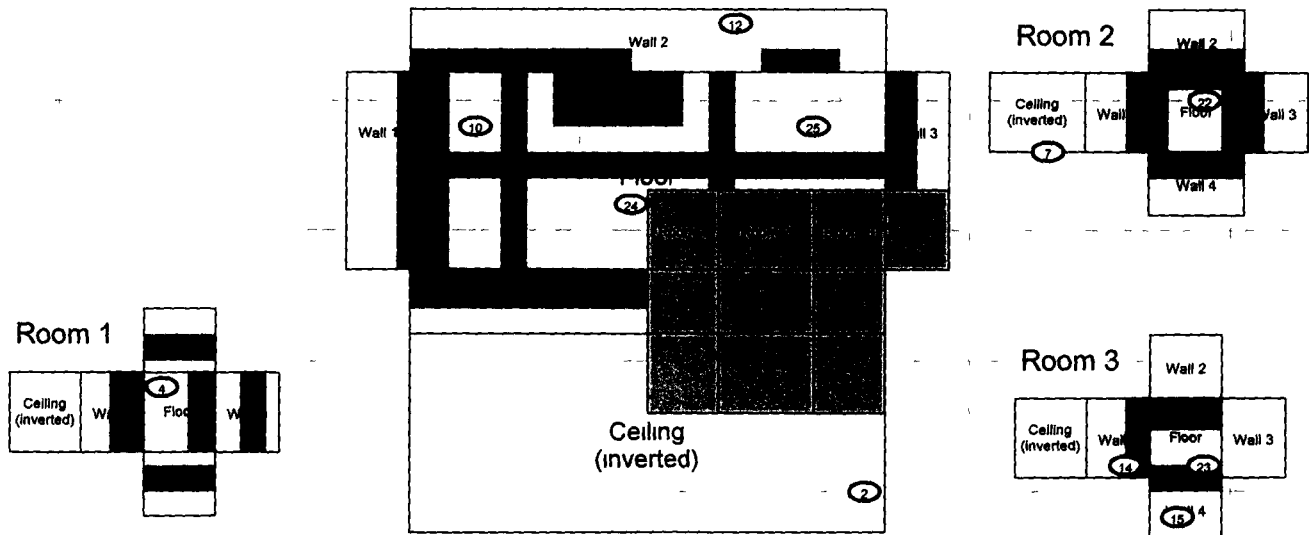
# **PRE-DEMOLITION SURVEY FOR GROUP 12**

Survey Area A      Survey Unit G12-A-005      Classification 3  
 Building T452C  
 Survey Unit Description Group 12      Total Roof Area 147 sq m  
 Total Area 878 sq m      Total Floor Area 147 sq m

## **T452C Exterior**



## **T452C Interior**



<p><b>Scan Area</b></p>		<p><b>SURVEY MAP LEGEND</b></p> <p>Smear &amp; TSA Location</p> <p>Smear TSA &amp; Sample Location</p> <p>Open/Inaccessible Area</p> <p>Area in Another Survey Location</p>		<p>Verbatim the United States Government for Kaiser Hill Co., nor DynCorp I&amp;ET nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p>		<p><b>Scan Survey Information</b></p> <p>Survey Instrument ID #(s) 7, 8</p> <p>RCT ID #(s) 1, 2</p>		<p><b>FEET</b></p> <p>0 30</p> <p><b>METERS</b></p> <p>0 10</p> <p>1 inch = 24 feet 1 sq m = 1 sq m</p>		<p>U.S. Department of Energy                  Rocky Flats Environmental Technology Site</p> <p>Prepared by: G12 Dept. 303-886-7787 Prepared for:</p> <p><b>DynCorp</b>                  THE ART OF TECHNOLOGY</p> <p>MAP ID: 02/02-0048/452C-SC April 18, 2002</p>	
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## ATTACHMENT D

### Chemical Data Summaries and Sample Maps

## Asbestos Data Summary

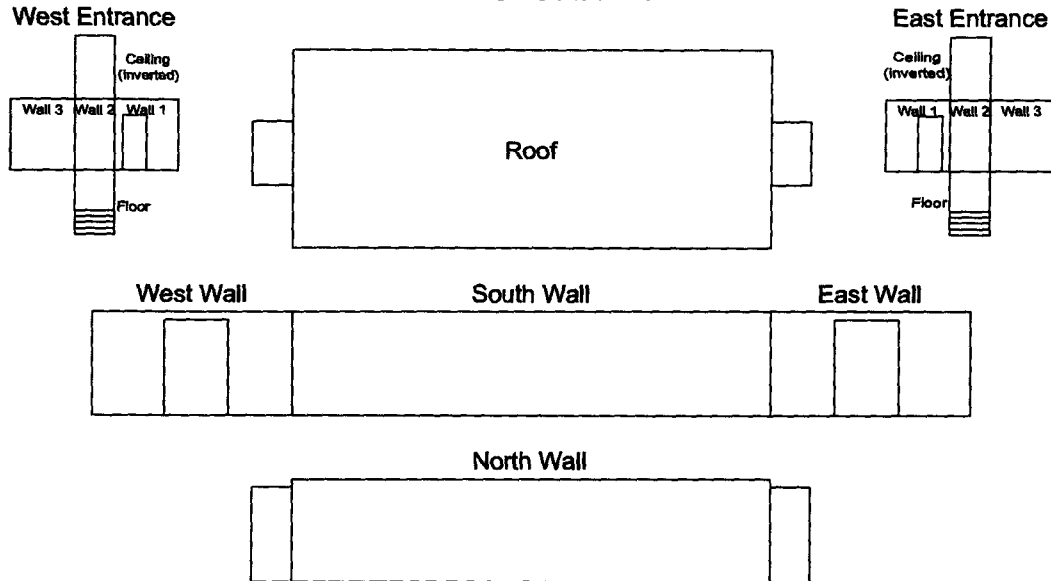
Sample Number	Survey Map Location Point	Material Sampled & Location	Analytical Results
Building T452C			
T452C-11152001-315-148	48	Main Room - 2' x 4' white & gray drop ceiling tile with large "worm" pattern	None Detected
T452C-11152001-315-149	49	Main Room - 2' x 4' white & gray drop ceiling tile with large "worm" pattern	None Detected
T452C-11152001-315-150	50	Main Room - 2' x 4' white & gray drop ceiling tile with large "worm" pattern	None Detected
T452C-11152001-315-151	51	Room 2 - 2' x 4' white & gray drop ceiling tile with large "worm" pattern	None Detected
T452C-11152001-315-152	52	Main Room - 2' x 4' white & gray drop ceiling tile with large "worm" pattern	None Detected
T452C-11152001-315-153	53	Main Room - 2' x 4' ivory & gray drop ceiling tile with small "worm" pattern	None Detected
T452C-11152001-315-154	54	Main Room - 2' x 4' ivory & gray drop ceiling tile with small "worm" pattern	None Detected
T452C-11152001-315-155	55	Main Room - 2' x 4' ivory & gray drop ceiling tile with small "worm" pattern	None Detected
T452C-11152001-315-156	56	Main Room - drywall and joint compound, exterior wall	None Detected
T452C-11152001-315-157	57	Room 1 - drywall, interior wall	None Detected
T452C-11152001-315-158	58	Room 1 - drywall, exterior wall	None Detected



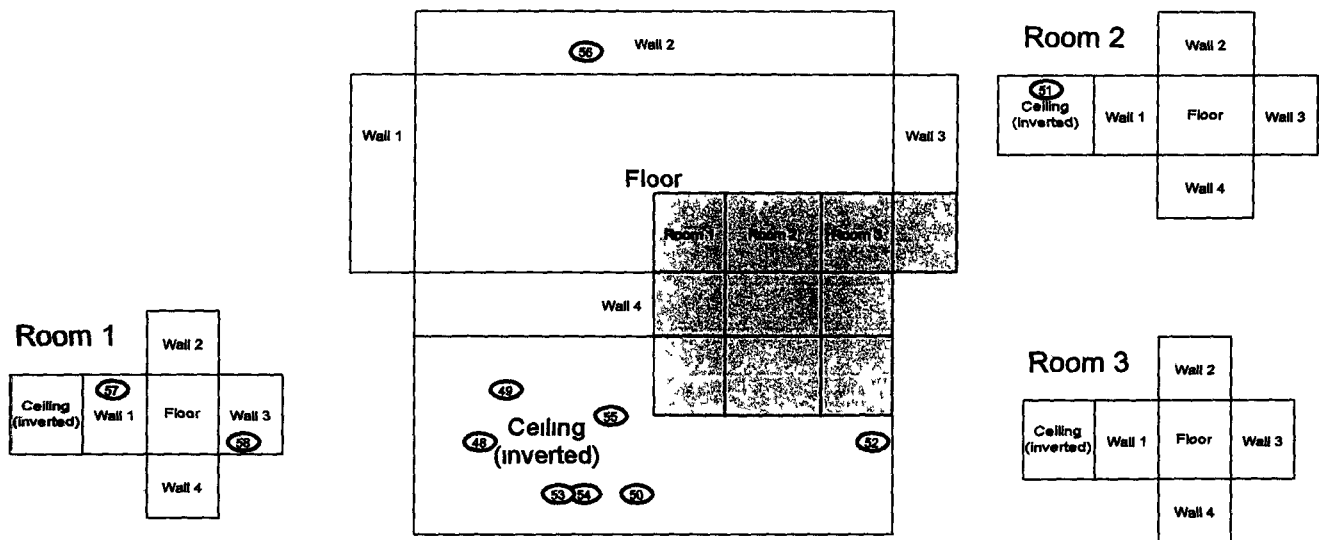
# CHEMICAL SAMPLE MAP FOR T452C

Asbestos Sample Locations

## T452C Exterior



## T452C Interior



<b>SURVEY MAP LEGEND</b> (M) Asbestos Sample Location (A) Beryllium Sample Location (H) Lead Sample Location (D) RCRA/CERCLA Sample Location (P) PCB Sample Location	Neither the United States Government nor KBR Inc. nor DynCorp A&E&T nor any agency thereof nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.	N ↑	0 FEET 30 0 METERS 10 1 inch = 24 feet 1 grid sq = 1 sq m.	U.S. Department of Energy Rocky Flats Environmental Technology Site Prepared by GRS Dept. 203-898-778 Prepared for: <b>DynCorp</b> THE ART OF TECHNOLOGY MAP ID: IV02-0043/T452C-Asb November 23, 2001
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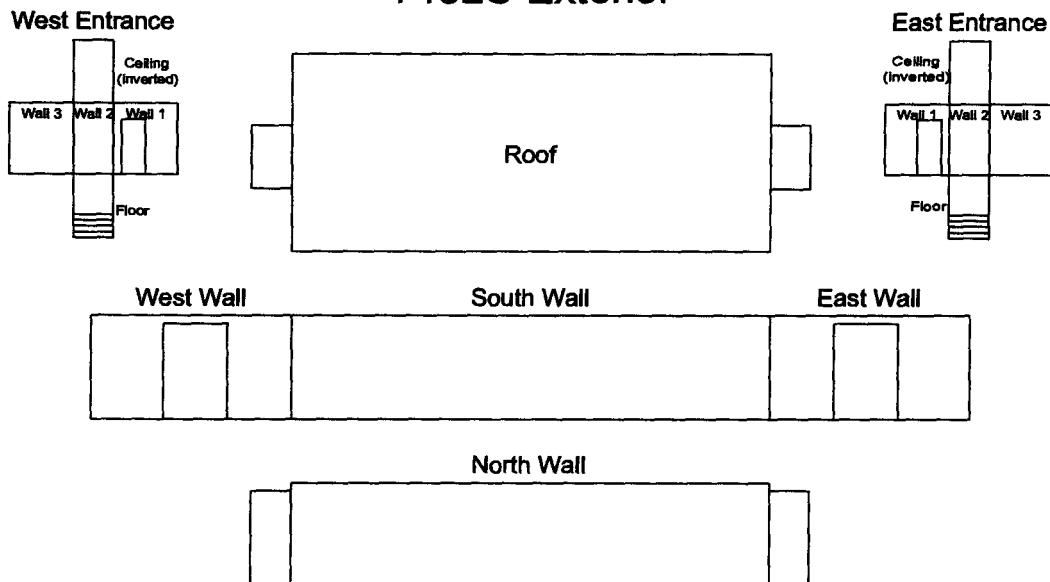
### Beryllium Data Summary

Sample Number	Survey Map Location Point	Sample Location	Result ( $\mu\text{g}/100\text{ cm}^2$ )
<b>Building T452C</b>			
T452C-111152001-315-228	28	Main Room, top of fluorescent light fixture	< 0.1
T452C-111152001-315-229	29	Main Room, top of locker	< 0.1
T452C-111152001-315-230	30	Main Room, top of Public Address speaker, east wall	< 0.1
T452C-111152001-315-231	31	Main Room, top of partition cube wall, west end	< 0.1
T452C-111152001-315-232	32	Main Room, top of electrical track, north wall	< 0.1

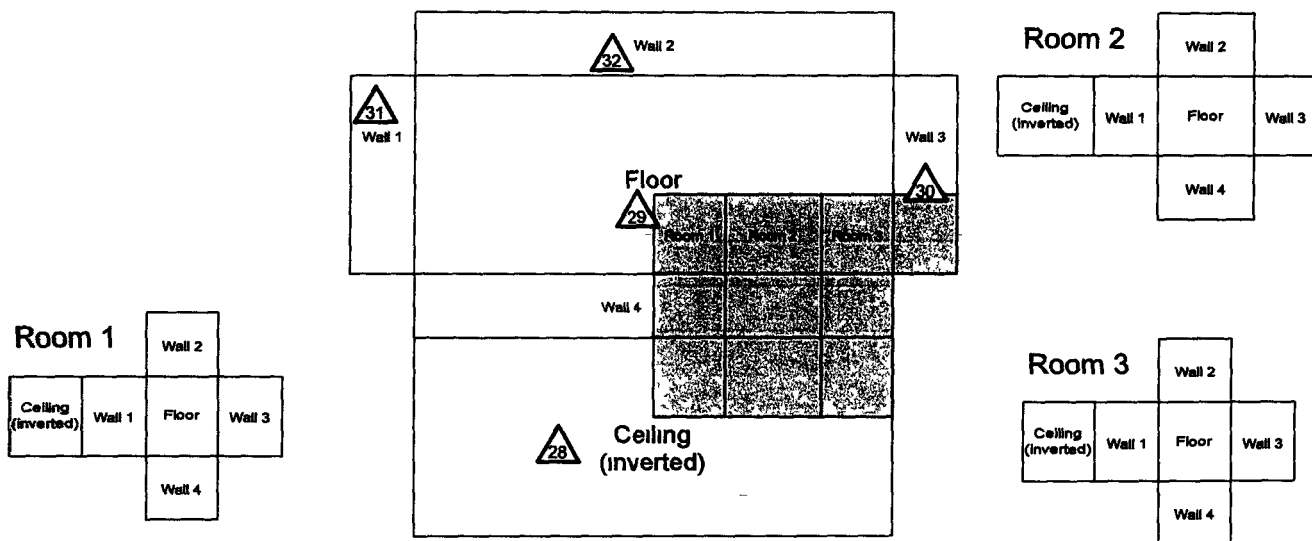
# CHEMICAL SAMPLE MAP FOR T452C

Beryllium Sample Locations

## T452C Exterior



## T452C Interior



<b>SURVEY MAP LEGEND</b> (H) Asbestos Sample Location (A) Beryllium Sample Location (M) Lead Sample Location (W) RCRA/CERCLA Sample Location (P) PCB Sample Location	Neither the United States Government nor Kester 168 Co. nor DynCorp I&ET nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.	N ↑	0 FEET 30 0 METERS 10 1 inch = 24 feet 1 grid sq = 1 sq. m.	U.S. Department of Energy Rocky Flats Environmental Technology Site Prepared by O&E Dept. 303-886-778 Prepared for <b>DynCorp</b> THE ART OF TECHNOLOGY MAP ID: 1492-0049/T452C-BE November 28, 2001
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## ATTACHMENT E

### Data Quality Assessment (DQA) Detail

## DATA QUALITY ASSESSMENT (DQA)

### VERIFICATION & VALIDATION (V&V) OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically beryllium and asbestos).

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed, the radiological survey assessment is provided in Table E-1, asbestos in E-2, and beryllium in E-3. A data completeness summary for all results is given in Table E-4.

All relevant Quality records supporting this report are maintained in the RISS Characterization Project File. The report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

No beta/gamma survey designs were implemented for T452C based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. Stated differently, based on the well-established suite of actinides historically used at the RFETS, all of these actinides would emit alpha radiation in exceedance of the applicable transuranic DCGLs before other DCGLs would be exceeded for their respective Uranium species – Technical Basis Document 00162, Rev 0, *Technical Justification for Types of Surveys Performed During Reconnaissance Level Characterization Surveys and Pre-Demolition Surveys in RISS Facilities*, corroborates the use of this approach.

Consistent with EPA's G-4 DQO process, the radiological survey design for this survey unit was performed per PDS requirements and was optimized by checking actual measurement results acquired during the pre-demolition survey against model output with original estimates. Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired.

### SUMMARY

In summary, the data presented in this report have been verified and validated relative to quality requirements and the project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results less than their associated action levels and with acceptable uncertainties. The data summary (including sample maps) for asbestos and beryllium are given in the Chemical Data Summaries And Sample Maps, Attachment D, of this RLCR. However, the T452C RLCR records are maintained in the Group 12 RLCR RISS Characterization Project Files. T452C has been posted with Level 2 Isolation Control signs to prevent the inadvertent introduction of radiological and hazardous materials thereby ensuring PDS integrity. In summary, the T452C RLCR meets the unrestricted release criteria with the confidences stated herein.

Table E-1 V&V of Radiological Surveys For T452C

Table E-1 V&V of Radiological Surveys For T452C					
V&V CRITERIA, RADIOLOGICAL SURVEYS		K-H RSP 16 00 Series MARSSIM (NUREG-1575)			
QUALITY REQUIREMENTS					
	Parameters	Measure	frequency	COMMENTS	
ACCURACY	initial calibrations	90%<x<110%	≥1	Multi-point calibration through the measurement range encountered in the field, programmatic records	
	daily source checks	80%<x<120%	≥1/day	Performed daily/within range	
	local area background Field	typically < 10 dpm	≥1/day	All local area backgrounds were within expected ranges ( i e , no elevated anomalies )	
PRECISION	field duplicate measurements for TSA	≥5% of real survey points	≥10% of reals	N/A	
REPRESENTATIVENESS	MARSSIM gridding methodology (Survey Unit G12-A-005)	statistical and biased	NA	Random w/ statistical confidence	
	Survey Maps	NA	NA	Random and biased measurement locations controlled/mapped to ±1m	
	Controlling Documents (Characterization Pkg, RSPs)	qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files), thorough documentation of the planning, sampling/analysis process, and data reduction into formats	
COMPARABILITY	units of measure	dpm/100cm <sup>2</sup>	NA	Use of standardized engineering units in the reporting of measurement results	
COMPLETENESS	Plan vs Actual surveys	>95%	NA	See Table E-4 for details	
SENSITIVITY	usable results vs unusable	>95%	NA		
	detection limits	TSA ≤50 dpm/100cm <sup>2</sup> RA ≤10 dpm/100cm <sup>2</sup>	all measures	PDS MDAs ≤ 50% DCGL <sub>w</sub>	

Table E-2 V&V Of Chemical Results For Asbestos - T452C

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		COMMENTS
ASBESTOS	METHOD EPA 600/R-93/116	LAB ---->	Reservoirs Environmental, Inc 02D0321	
QUALITY REQUIREMENT		RIN ---->		
		Measure	Frequency	
ACCURACY	Calibrations Initial/continuing	below detectable amounts	≥ 1	Semi-quantitative, per (microscopic) visual estimation
PRECISION	Actual Number Sampled LCSID Lab duplicates	all below detectable amounts	≥ 11 samples	Semi-quantitative, per (microscopic) visual estimation
REPRESENTATIVENESS	COC	Qualitative	NA	Chain-of-Custody intact completed paperwork, containers w/ custody seals
	Hold times/preservation	Qualitative	NA	N/A
	Controlling Documents (Plans, Procedures, maps, etc )	Qualitative	NA	See original Chemical Characterization Package (planning document), for field/sampling procedures (located in project file,) thorough documentation of the planning, sampling/analysis process, and data reduction into formats
COMPARABILITY	Measurement Units	% by bulk volume	NA	Use of standardized engineering units in the reporting of measurement results
COMPLETENESS	Plan vs Actual samples Usable results vs unusable	Qualitative	NA	See Table E-4, final number of samples at Certified Inspector's discretion
SENSITIVITY	Detection limits	<1% by volume	all measures	N/A

Table E-3 V&V Of Chemical Results For Beryllium - T452C

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE	
BERYLLIUM	Prep NMAM 7300 METHOD OSHA ID-125G	LAB ---->	Data Chem Salt Lake City, Utah
QUALITY REQUIREMENTS		RIN ---->	02D0322
ACCURACY	Calibrations Initial	Measure	Frequency
	Continuing	linear calibration	≥1
	LCS/MS	80%<R<120%	≥1
	Blanks - lab & field	80%<R<120%	≥1
	interference check std (ICP)	<MDL	≥1
PRECISION	LCSD	NA	NA
	field duplicate	80%<R<120% (RPD<20%)	≥1
	COC	all results < RL	≥1
REPRESENTATIVENESS	hold times/preservation	Qualitative	NA
	Controlling Documents (Plans, Procedures, maps, etc)	Qualitative	NA
	measurement units	Qualitative	NA
COMPARABILITY	Plan vs Actual samples	ug/100cm <sup>2</sup>	NA
COMPLETENESS	usable results vs unusable	>95%	NA
SENSITIVITY	detection limits	>95%	NA
		MDL of 0.012 ug/100cm <sup>2</sup>	all measures
		<b>COMMENTS</b> No qualifications significant enough to change project decisions, i.e., Type 1 Facility confirmed, all results were below associated action levels	



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**Table E-4 Data Completeness Summary For T452C**

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Asbestos	T452C (interior)	11 biased (interior)	11 real (interior)	No ACM present, all results were none detected	40 CFR763.86, 5 CCR 1001-10, EPA 600/R-93/116 RIN 02D0321
Beryllium	T452C (interior)	5 biased (interior)	5 real (interior)	No contamination found at any location	OSHA ID-125G - RIN 02D0322 No results above action level (0.2 ug/100cm <sup>2</sup> ) or investigative level (0.1 ug/100cm <sup>2</sup> )
Radiological	Survey Area A Survey Unit G12-A-005 T452C (interior and exterior)	25 α TSA (15 random & 10 biased) 25 α Smears (15 random & 10 biased) 2 QC TSA 5% Scan	50 real, 2 QC TSA (22 interior/28 exterior)	No contamination found at any location	No results above DCGL <sub>w</sub> or DCGL <sub>EMC</sub> action level (20 dpm/100cm <sup>2</sup> removable, 100 dpm/100cm <sup>2</sup> average, and 300 dpm/100cm <sup>2</sup> maximum)

<sup>A</sup> # of samples required is estimate only, based on miscellaneous material types, final # of samples at discretion of IH